Fact Sheet

USE OF SCRAP RUBBER IN ASPHALT PAVEMENT SURFACES

PROBLEM

Each year the United States disposes of approximately 200 million passenger tires and 40 million truck tires (2.1 million tons and 1.9 million tons, respectively). One method of disposing of this huge amount of waste material is to recycle the ground rubber tires into asphalt pavement. CRREL researchers evaluated the replacement of stone aggregate with rubber particles to improve ice breakup (disbonding) on icy surfaces.

SOLUTION

CRREL researchers studied the effects of a chemical-free, passive pavement modification using rubber aggregate from scrap tires. Higher concentrations of rubber were used to enhance the ice disbonding characteristics of this type of pavement.

RESULTS

In a test of disbonding ice from pavement cores at the Midwest Research Institute, the CRREL rubber cores performed the best. Therefore, using scrap rubber in asphalt provides a flexible surface that promotes ice disbonding on highways and runways. A direct result is a decrease in hydroplaning and improved skid resistance. Other benefits include a chemical-free method for ice removal, the recycling of discarded tires, and increased pavement life. The following report and videotape explain in detail the use of scrap rubber in asphalt:

- "Use of Scrap Rubber in Asphalt Pavement Surfaces," CRREL Special Report 91-27
- "Using Scrap Rubber in Pavement," videotape, 8 minutes

These items may be obtained from the CRREL library.

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